

# 6-12 amp Modular DC-DC Converter with 6 amp Converter Modules

## Key Features

- **Modular Design**—plug-in modules enable easy expansion of capacity or rapid replacement without taking the system off line
- **High Efficiency**—high frequency technology creates long term energy savings
- **Compact Design**—requires less than 7" (17.78cm) of vertical rack space
- **Quiet Operation**—permits installation near the system, eliminating long cable runs
- **Isolated Output**—allows grounding either pole

## Description

The Lorain® HSB modular DC-DC converters utilize high frequency technology to create compact, reliable 130 VDC from -48 VDC power.

The modular design makes the HSB extremely flexible. Simple 6 amp plug-in modules can be used to increase capacity from 6 amps (one module) to 12 amps without taking the unit off line and with no additional wiring or fusing.

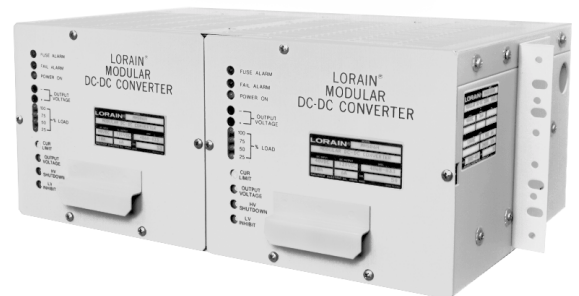
Cabinets equipped with two modules can also be wired for independent operation with one performing at +130 volt and the other at -130 volt. Applications where power growth requirements are anticipated can install blank cabinets ready for simple plug-in additional capacity when necessary. These compact units fit 19" (48.26cm) or 23" (58.42cm) relay racks and require less than 7" (17.78cm) of vertical space.

## Application

The HSB series is designed for use in toll offices and other applications requiring 130 VDC.

## Additional Information

For additional specification, engineering and installation information, specify model HSB and spec. number 588240500 (cabinet) and spec. number 486883300 (6 amp module [up to 2 per cabinet]).



**Model HSB6H Equipped with Two Modules**

# 6-12 amp Modular DC-DC Converter with 6 amp Converter Modules

## Specifications

### Input

Voltage: 48.0 (42 to 56) VDC

Current:

17.8 amps with one 6 amp module

35.2 amps with two 6 amp modules

Circuit Protection: A 30 amp fuse in each converter module opens the negative input lead.

Input Fusing (External to Unit): A separate 30 amp input fuse is recommended for each converter module

### Output

Voltage: 130.0 VDC (positive or negative ground)

Current:

6 amps with (1) 6 amp module

12 amps with (2) 6 amp modules

Efficiency: 92% between 50% and 100% of full load at nominal input voltage

Metering: LED indicators at 25% load increments on each converter module

Regulation: Steady state output voltage remains within  $\pm 1\%$  of the set point for any load current from no load to full load for the input voltage range of 42 to 56 volts.

Dynamic Response: For any step load within the range of 10% to 100% of full load, the maximum voltage transient does not exceed  $\pm 2\%$  of the initial steady state voltage.

Filtering:

Voice band noise — less than 21dBnC

Wide band noise — does not exceed 500 millivolts peak-to-peak or 100 millivolts rms over the frequency range of 10 Hz to 50 MHz

### Protection

Short Circuit: A 10 amp fuse is located on the output lead of each converter module.

Current Limit: Output current is limited to a preset (adjustable) value. Factory set at 110% of full load.

### Environmental

Operating Temperature: 0° C to +50° C (+32° F to +122° F)

Storage Temperature: -20° C to +65° C (-4° F to +149° F)

Humidity: 0% to 95% relative humidity, noncondensing

Ventilation/Altitude: The maximum ambient operating temperature should be derated linearly from +50° C (+122° F) at sea level to +40° C (+104° F) at an elevation of 10,000' (3,048m).

Audible Noise: Operating frequency is beyond audible range

Heat Dissipation:

When equipped with (1) module — 240 Btu/hr maximum

When equipped with (2) modules — 480 Btu/hr maximum

EMI/RFI Suppression: Conforms to the radiated noise requirements of FCC rules Part 15, Subpart J, Class A.

Additionally, conducted EMI on the DC input and output leads conforms to the requirements of NEMA PE-7-1985.

### Physical Characteristics

Mounting: Unit furnished with reversible mounting angles for 19" (48.26cm) or 23" (58.42cm) mounting.

Dimensions:

Height: 6.94" (17.62cm)

Width: 19" (48.26cm)

Depth: 11.25" (28.58cm)

Weight: 43 lbs. (19.51 kgs) with two modules



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